

# Summary of Use Sites for Registered Commensal Rodent Rodenticides

August 20, 2002

## Introduction

This document summarizes the use sites for commensal rodent rodenticides currently registered in the U.S. The eleven (11) rodenticides<sup>1</sup> listed in this document include those addressed in the Reregistration Eligibility Decisions (REDs) for the Rodenticide Cluster (brodifacoum, bromadiolone, bromethalin, chlorophacinone, diphacinone, sodium salt of diphacinone) and for zinc phosphide, as well as four other rodenticides [warfarin, sodium salt of warfarin, difethialone, and Vitamin D3 (also known as cholecalciferol)], which also are registered for control of commensal (living in close association with man, literally “at the same table”) rats and mice<sup>2</sup>. The Rodenticide Cluster RED also mentioned two (2) other rodenticides: pival and its sodium salt. Since EPA canceled all remaining products of these two rodenticides (pival and its sodium salt) in July 2002, they are not included here.

## Active Ingredients

The following table lists the active ingredients that this risk assessment covers, the general group of pesticides to which each active has been assigned, the year of first registration, and the concentrations of active ingredients in registered end-use products.

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<sup>1</sup>While there are 11 actual rodenticides, the sodium salt of warfarin, which only includes a single indoor product, has been lumped with warfarin, and the sodium salt of diphacinone, which only includes two indoor products, has been lumped with diphacinone.

<sup>2</sup>In the United States, the term “commensal rodents” includes Norway rats, roof rats, and house mice.

Name of Pesticide, First Year Registered, General Pesticide Group, & Concentrations of Applied Products										
1 <sup>st</sup> Generation Anticoagulants					2 <sup>nd</sup> Generation Anticoagulants <sup>3</sup>			Non-Anticoagulants		
Warfarin (1950)	Warfarin, Na+ (1954)	Diphacinone (1960)	Diphacinone, Na+ (1962)	Chlorophacinone (1971)	Brodifacoum (1979)	Bromadiolone (1980)	Difethialone (1995)	Vitamin D3 (1984)	Bromethalin (1984)	Zinc Phosphide (1947)
.025% and .054% Baits	.028% Baits	.005% and .01% Baits 0.2% Tracking Powder	.005% Baits	.005% and .01% Baits; 0.2% Tracking Powder	.005% Baits	.005% Baits	.0025% Baits	.075% Baits	.005% and .01% Baits	1% to 2% Baits 10% Tracking Powder

<sup>3</sup> 2<sup>nd</sup> Generation Anticoagulants are anticoagulants that have been shown to control effectively at least one commensal rodent species shown to be resistant to the 1<sup>st</sup> Generation anticoagulant, warfarin.

## Pests

The following table lists organisms claimed as pests on the label of at least one currently registered product containing one of the 11 active ingredients considered in this risk assessment.

Target Pests Mentioned in Comparative Rodenticide Risk Assessment		
Order	Family	Common Name
Rodentia (Rodents)	Muridae (Old World Rats/Mice)	Norway Rat Roof Rat Polynesian Rat House Mouse

	Cricetidae (New World Rats/Mice/Voles/Lemmings)	Harvest Mouse White-footed Mouse Deer Mouse Meadow Voles/Mice Rice Rats Cotton Rats Florida Water Rat Woodrats Muskrat
	Geomyidae	Pocket Gophers
	Heteromyidae (Kangaroo Rats)	Kangaroo Rats
	Sciuridae (Squirrels)	Prairie Dogs Ground Squirrels Woodchuck Marmot Chipmunks Red Squirrel
	Capromyidae (Nutrias)	Nutria
Lagomorpha (Pikes, Hares, and Rabbits)	Leporidae (Hares and Rabbits)	Jackrabbits
Carnivora (Meat Eaters)	Viverridae (Mongoose)	Mongoose
Insectivora (Insect Eaters)	Talpidae (Moles)	Moles

## Sites

The following two tables list the use sites that this risk assessment covers. Table 1 lists use sites of commensal rodenticides registered June 2002 to control Norway rats, roof rats, and house mice at structural sites. Table 2 covers use sites of rodenticides registered in June 2002 to control rodents, rabbits, and mongoose at non-structural sites.

Table 1. Use Sites of Commensal Rodent Rodenticides Registered in June 2002 to Control Norway Rats, Roof Rats, and House Mice at structural sites.												
		Name of Pesticide, First Year Registered, & Use Sites										
Sites	Pests	1 <sup>st</sup> Generation Anticoagulants					2 <sup>nd</sup> Generation Anticoagulants <sup>4</sup>			Non-Anticoagulants		
		Warfarin (1950)	Warfarin, Na+ (1954)	Diphacinone (1960)	Diphacinone, Na+ (1962)	Chlorophacinone (1971)	Brodifacoum (1979)	Bromadiolone (1980)	Difethialone (1995)	Cholecalciferol <sup>5</sup> (1984)	Bromethalin (1984)	Zinc Phosphide (1947)
In and Around Buildings	NR,RR,HM	X <sup>6</sup>	X	X	X <sup>7</sup>	X	X	X <sup>8</sup>	X <sup>7,9</sup>	X	X	X
Inside Transport/ Cargo Vehicles	NR,RR,HM						X	X	X	X	X	
Sewers	NR,RR,HM			X			X	X			X	
Pest Codes: NR=Norway Rat; RR=Roof Rat; HM=House Mouse Classification: To date, the Agency has classified only four (4) public health rodenticide products for control of Norway rats, Roof rats, and House mice as “Restricted Use”: 1 Diphacinone tracking powder (EPA Reg. No. 12455-56); 2 chlorophacinone tracking powders (EPA Reg. Nos. 7173-113 and 7173-172); and 1 zinc phosphide tracking powder (EPA Reg. No. 12455-16). All are for “Indoor Use Only”.												

<sup>4</sup> 2<sup>nd</sup> Generation Anticoagulants are anticoagulants that have been shown to control effectively at least one commensal rodent species shown to be resistant to the 1<sup>st</sup> Generation anticoagulant, warfarin.

<sup>5</sup> Cholecalciferol is also known as “Vitamin D<sub>3</sub>”.

<sup>6</sup> An “X” in a box means that EPA has registered one or more Federally registered products under section 3 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for the site-pest combinations listed. In addition, individual states may have registered one or two state registered products under section 24(c) of FIFRA for the same site-pest combinations.

<sup>7</sup> Indoor use only.

<sup>8</sup> In Non-Urban Areas, may only be used inside of homes and agricultural buildings.

<sup>9</sup> Outdoor placements in Urban Areas must be in tamper-resistant bait stations.

**Table 2. Use Sites of Rodenticides Registered in June 2002 to Control Rodents, Rabbits, and Mongoose at non-structural sites**

		Name of Pesticide, First Year Registered, & Use Sites										
Sites	Pests	1 <sup>st</sup> Generation Anticoagulants					2 <sup>nd</sup> Generation Anticoagulants			Non-Anticoagulants		
		Warfarin (1950)	Warfarin, Na+ (1954)	Diphaci- none (1960)	Dipha- cinone, Na+ (1962)	Chloro- phacinone (1971)	Brodifa- coum (1979)	Broma- diolone (1980)	Difeth- ialone (1995)	Cholecal- ciferol <sup>15</sup> (1984)	Brome- thalin (1984)	Zinc Phosphide (1947)
Landfills	NR,RR,HM			X <sup>10</sup>								
Irrigation Ditches/ River Banks	NR,RR,HM			X								
Irrigation canal & Ditch Bank; Terr NonF	GS											X
Sugarcane	Rats: NR, RR, PR, RiceR, FWR, CR											X
Terr NonF (adjacent to crops)	Rats: NR, RR, RiceR, FWR, CR			X (FL)								
Terr NonF	Roof Rats									X (CA) <sup>11</sup>		
In Trees	Roof Rats			X (CA)		X (CA)						
Forests, Terr Nfood Crop; MacNut Orc	Rats: NR, RR, PR,			X (HI)								
MacNut Orc	Rats: NR, RR											X
Rangeland and Non- crop Areas	Kangaroo Rats											X

<sup>10</sup>An “X” in a box means that EPA has registered one or more Federally registered products under section 3 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for the site-pest combinations listed. In addition, individual states may have registered one or two state registered products under section 24(c) of FIFRA for the same site-pest combinations.

<sup>11</sup>California registered this section 24(c) product (CA-970015) for use only on San Clemente Island in special tamper-resistant bait stations.

**Table 2. Use Sites of Rodenticides Registered in June 2002 to Control Rodents, Rabbits, and Mongoose at non-structural sites**

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Terr N Food, Trees, dens or Buildings	Woodrats			X (CA)		X (CA)						X
Rangeland, Terr N Food	GS, PD											X
Terr F and NF (sta)	GS, and Chipmunks			X (CA)		X (CA)						
Terr NF (bait stations)	Ground Squirrels			X (6 states <sup>12</sup> )		X (CA, NV)						X
Terr NF (hd brd)	Ground Squirrels			X (CA)		X (CA, MT)						X
Sugar Maple Orchards	Red Squirrels, chipmunks, WFM											X (VT)
Terr N food (Bait Sta, Floating Stations)	Muskrats and Nutria			X (CA)		X (CA)						X
Forestry (hd or brd)	Deer Mice or MV			X (CA)		X (CA, ID)						X
Orchards, Groves, Nur, Tree Pl, or NF (dorm)	Mice: MV or WFM			X (18 states <sup>13</sup> )		X (15 states <sup>14</sup> )						X

<sup>12</sup>CA, ID, MT, NV, WA, WY

<sup>13</sup>CA, CT, GA, ID, MA, MI, MO, NC, NH, OH, OR, PA, SC, VA, UT, VT, WA, WV

<sup>14</sup>CA, ID, MD, MI, MO, NC, NY, OH, OR, PA, SC, VA, VT, WA, WV

**Table 2. Use Sites of Rodenticides Registered in June 2002 to Control Rodents, Rabbits, and Mongoose at non-structural sites**

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Vineyards	Mice: MV; WFM											X
Reduced Tillage and No-Till Corn	GS, Mice: MV, HM, WFM, Rats: KR, CR											X
Artichokes (hd brd)	Cal voles					X (CA)						
Small Grains (seed)	Meadow Voles			X (OR,WA)								
Alfalfa, Timothy (sta)	Meadow Voles											X
Sugar Beets (CA only)	Mice: CV, MV											X
Small Berries	Mice: MV, WFM											X
Terr NonF, Pasture, Rangeland,	Woodchucks, Marmots, JR											X
Lawns, Golf Courses	Moles	X				X						X
Terr NonF,	pocket gophers			X		X						X
Terr NonF (bait sta)	Mongoose			X (HI)								
Terr NFood. Airports	Jackrabbits			X (CA)		X (CA)						
Rangeland, pastures, Terr Nfood	JR, marmots, woodchucks											X

Site Codes: MacNut Orc=Macadamia Nut Orchard; Nur=Nursery; Terr NonF=Terrestrial NonFood/NonFeed; Tree Pl=Tree Plantation; NF=NonFood/NonFeed; seed=grown for seed;  
Method of Application Codes: brd=broadcast; hd=hand; sta=bait station

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Pest Codes: RATS: CT=Cotton Rat; FWR=Florida Water Rat; NR=Norway Rat; PR=Polynesian Rat; RR=Roof Rat; RiceR=Rice Rat; WR=Wood Rat; MICE: HM=House Mouse; MV=Meadow Vole/Mouse; WFM=White-footed Mouse; KR=Kangaroo Rat; OTHER SPECIES: MR=Muskrat; GS=Ground Squirrel; PD=Prairie Dog; PG=Pocket Gopher; CP=Chipmunk; Moles=Moles; JR=Jackrabbits; MG=Mongoose												
Classification: Restricted Use Pesticides: For non-structural sites, EPA has previously classified any end-use, Zinc Phosphide bait as “Restricted” (40 CFR 152.175). [Underground hand placement of 1-2% Zinc Phosphoide products are unclassified.] One field use of Vitamin D3 (CA-970015) is also “restricted”. In the 1998 Rodenticide Cluster RED, EPA proposed that any existing field uses of rodenticides also be classified as “Restricted”.												

<sup>15</sup>Cholecalciferol is also known as “Vitamin D<sub>3</sub>.”